

Original Research Article

PREVALENCE AND INTENSITY OF INFECTION OF GASTROINTESTINAL PARASITES IN CAVIES FROM MENOUA DIVISION-WEST REGION OF CAMEROON

Abstract

Background: Gastrointestinal tract (GIT) parasites are known to be widespread in Cameroon and limit livestock production in many areas and countries of the world. The aim of this study was to have an inventory of gastrointestinal parasites of cavia in Menoua Division, West Region of Cameroon., and to characterize the infection rates.

Method: Three hundred Cavies (171 females and 129 males) aged 1 week to 1 year old were examined from May 2013 to June 2014. A qualitative (double centrifugation flotation technique) and a quantitative (Mc Master Technique) coprologic analyses were used for the egg or oocyst count of gastrointestinal parasites.

Result: Of the total number of cavies examined, 237 showed positive with one or more gastro-intestinal parasites, giving an overall prevalence of 79.0%. Six genera of gastrointestinal nematodes: *Spirocerca* spp. (3.0%), *Trichuris* spp. (3.3%); *Ascaris* spp. (4%); *Trichostrongylus* spp. (10.3%); *Strongyloides* spp. (10.7%); *Paraspidodera* sp. (31.0%) and one species of Protozoa represented by *Eimeria* spp. (48.7%) were identified. There was a significant difference in prevalence with all the seven gastrointestinal parasites based on locality, while with respect to age group, only *Ascaris* spp., *Paraspidodera* spp. and *Eimeria* spp. showed significant difference in prevalence ($P < 0.05$).

Conclusion: The overall high prevalence recorded in this study clearly indicates the need for strategic parasite control in cavies with particular attention focused on adult to old aged cavies which showed significantly higher prevalence and intensity for most gastrointestinal parasites.

Key words: Prevalence, Intensity, Helminths, Protozoa, Cavies.

1.0 Background

Gastrointestinal tract (GIT) parasites are known to be widespread in Cameroon and limit livestock production in many areas and countries of the world (Ndamukong, 1988). Studies have shown that helminth and protozoan parasites are by far the most serious causes

of production losses in farmed animals and are indisputably the cause of serious production losses in sub-Saharan Africa, and indeed worldwide (Odoi, *et al.*, 2007). Rosenio *et al.* (2013) highlighted the fact that parasitism is generally believed to be the most important disease problem of domestic animals raised in the rural areas. In Nigeria, where 70-80% of livestock production employs native practices that involve extensive grazing of animals, parasites cause serious economic losses due to emaciation, reduced/low growth rates, anaemia, and death. Cavies (Guinea pigs) have been shown to play a vital role in the animal protein supply and income generation in rural areas in Cameroon (Fonteh *et al.*, 2005). Despite this, the health of these animals have been accorded little scientific efforts. This observation is supported by Niba *et al.*, 2012 who reported that one of the major constraints to cavy culture in Cameroon is the health of these animals. They further highlighted the fact that there is a dearth of information concerning diseases and parasites of cavies in Cameroon. The aim of this study therefore was to have an inventory of gastrointestinal parasites of cavies from Menoua Division, West Region of Cameroon, and to characterize the infection rates.

2.0 Methods

2.1 Area of study

This study was carried out between May 2013 and June 2014 in Menoua Division, West Region of Cameroon. Menoua Division covers a surface area of 1380Km². It is composed of six Sub-Divisions; the division spans from Santchou at an altitude of 600m through Dschang (1200 m) and topping on the Plateau of Djuttitsa at an altitude of 2200m. Specifically, the study was carried out in the following localities: Santchou (600m). Dschang (1200m), Fokoue(1200m), Penka -Michel (1500m) ,Fongo – Tongo (2000m), and Nkong-ni (2000m). Menoua Division was purposively chosen based on its high level of cavy culture, it is a grassland area with above 80% of the inhabitants being farmers. It is therefore one of the important bread baskets in Cameroon (Seino *et al.*, 2013).

2.2 Type of study

It was a cross-sectional study carried out in 15 villages within Menoua division, West region of Cameroon. The animals were randomly selected using table of random numbers or lottery system. The sample size was estimated according to the methods provided by Thrusfield, (2005).

2.3 Sample collection

In order to evaluate the prevalence of infection of gastrointestinal parasites, a total of 300 cavy were examined in their various farms within the following localities: Santchou (42), Nkong-ni (49), Penka -Michel (51), Fongo – Tongo (52), Dschang (53), Fokoue (53). Ages were determined based on weight of the animal, length of the toenails, together with information from the cavy farmers (Anye *et al*, 2010b; WikiCavy 2014). The sampled animals were attributed numbers, weighed and sex noted, after which they were placed in a ten chambered cage, each per chamber. They were allowed to defaecate within a six-hour period in their various chambers at the different farms. Faeces were put in sealable plastic bags, labelled with the number attributed to a specific animal, age, sex, date and time of collection. The faeces were then dispatched to the laboratory where they were analysed within 24 hours.

2.4 Parasitological examination

Corprologic analysis was done to have a quantitative and qualitative appreciation of the prevalence of infection of the parasites. For the qualitative analysis, faeces were analysed by the double-centrifugal flotation technique using saturated sodium chloride solution (concentration : 6.84M) as described by Baker (2007). For quantitative analysis or determination of the number of eggs per gram of faeces, the Mc Master technique described by Thienpont *et al.*, 1986; Foreyt, 2001) was used.

2.5 Statistical analysis

The collected data was stored in Excel 2007, later transferred to Statistical Packages for Social Science (SPSS version 19.0) for statistical analysis. The prevalence of gastrointestinal parasites was compared using Chi square test. Mann-Whitney test was used to evaluate parasite intensity between sex and Kruskal-Wallis test was used to compare parasite intensity between age and locality. A critical probability of ($P < 0.05$) was adopted throughout as a cut-off point for statistical significance between groups compared. All statistical tables retrieved from analysis with SPSS.

3.0 Results

3.1. Overall prevalence of gastrointestinal parasites in cavy

The following six genera of gastrointestinal nematodes were recorded : *Spirocerca* spp. 9 (3.0%), *Trichuris* spp. 10 (3.3%); *Ascaris* spp. 12(4%); *Trichostrongylus* spp. 31(10.3%); *Strongyloides* spp. 32(10.7); *Paraspidodera* sp. 93(31.0%) while one genus of Protozoa represented by *Eimeria* spp. 146 (48.7%) was also recorded. The most prevalent

gastrointestinal parasite was *Eimeria* spp. (48.7) followed by *Paraspidodera* sp.(31.0%) while the least prevalent was *Spirocerca* spp. (3.0%).

3.1.1. Prevalence of gastrointestinal parasite in cavies per locality

Eimeria spp. and *Paraspidodera* sp. were found in all the six localities of the study. The prevalence of *Eimeria* spp. was highest in cavies from Penka-Michel (76,47%) followed by those from Dschang (62.26%) and Nkong-ni (51.02%). The lowest prevalence for *Eimeria* spp. was recorded in Fongo-Tongo (21.15%). The prevalence of *Paraspidodera* sp. was highest in Dschang (43.4%), followed by those from Nkong-ni (38.78%) and Santchou (38.1%). The other five gastrointestinal parasites were found to be completely absent in some localities. On the other hand, during this study, it was noted that *Spirocerca* spp. (17.31%) was found only in Fongo- Tongo. There was a significant difference in the prevalence ($P < 0.05$) of all the seven gastrointestinal parasites based on locality.

Table 1: Prevalence of gastrointestinal parasite in cavies per locality [N (%)]

	localities						TOTAL(%)
	Dschang	Fokoue	Fong-Tongo	Nkong-ni	Penka Michel	Santchou	
Gastro-intestinal parasites							
<i>Eimeria</i> spp.	33(62.26)	20(37.73)	11(21.15)	25 (51.02)	39(76.47)*	18 (42.86)	146(48.7)
<i>Ascaris</i> spp.	0	8 (15.09)*	0	0	0	4 (9.52)	12 (4.0)
<i>Trichostrongylus</i> spp.	11 (20.75)*	7 (13.21)	0	0	10 (19.61)	3 (7.14)	31 (10.3)
<i>Trichuris</i> sp.	0	0	0	4 (8.16)	6 (11.76)*	0	10 (3.3)
<i>Strongyloides</i> spp.	8 (15.09)	4 (7.55)	12 (23.08)*	8 (16.32)	0	0	32(10.7)
<i>Spirocerca</i> spp.	0	0	9 (17.31)*	0	0	0	9 (3.0)
<i>Paraspidodera</i> sp.	23 (43.4)*	15(28.30)	10(19.23)	19 (38.78)	10 (19.60)	16 (38.1)	93 (31.0)

*- Differences significant at 5% ($P < 0.05$).

3.1 2. Influence of host age on the Prevalence of gastrointestinal parasites

Eimeria spp., *Paraspidodera* sp., *Ascaris* spp., and *Trichostrongylus* spp. were found in all age groups and had highest prevalence in middle and old age animals. *Strongyloides* spp., *Trichuris* spp. and *Spirocerca* spp. were completely absent in young animals, with highest prevalence in the middle age animal. The genus most represented was *Eimeria* (68.0%), followed by *Paraspidodera* (48.7%), then *Trichostrongylus* (22.0%), *Strongyloides*

sp.(16.2), *Spirocerca* (8.1%), and the least prevalent was *Trichuris* (8.0%). It was noticed during this study that the most vulnerable age groups were caviés of 5 – 8weeks and 13-16 weeks animals, having the highest prevalence for the different parasites (Table 2)

However, there was a significant difference in prevalence ($P<0.05$) based on age groups only with *Ascaris* spp., *Spirocerca* sp., and *Paraspidodera* s

Table 2: Influence of host age on the prevalence of gastrointestinal parasite [N (%)]

	Age group (weeks)				
	1 - 4	5 - 8	9 - 12	13 -16	> 16
Gastrointestinal parasites					
<i>Eimeria</i> spp.	21 (32.3)	41(46.6)	30(50.0)	34(68.0)*	20 (54.1)
<i>Ascaris</i> spp.	2 (3.1)	2 (2.3)	2 (3.3)	1 (2.0)	5 (13.5)*
<i>Trichostrongylus</i> spp.	2 (3.1)	7 (8.0)	6 (10)	11 (22.0)	4 (10.8)
<i>Trichuris</i> sp.	0	3 (3.4)	3 (5.0)	4 (8.0)	0
<i>Strongyloides</i> spp.	0	9 (10.2)	9 (15.0)	8 (16.0)	6 (16.2)
<i>Spirocerca</i> spp.	0	0	2 (3.3)	4 (8.0)	3 (8.1)
<i>Paraspidodera</i> sp.	10 (15.4)	30(34.1)	18 (30.0)	16 (32.0)	18 (48.7)*

*- Differences significant at 5% ($P<0.05$).

3.1.3. Influence of host sex on the prevalence of gastrointestinal parasite

Both sexes were susceptible to all genera of gastrointestinal parasites recorded. Generally, it was observed that of the seven gastrointestinal parasites recorded, prevalence was slightly higher in females than in males (Table 3). Nevertheless, this difference in prevalence was significant between sex ($P>0.05$) only for *Ascaris* spp.

Table 3: Prevalence of gastrointestinal parasite by sex of caviés [N (%)]

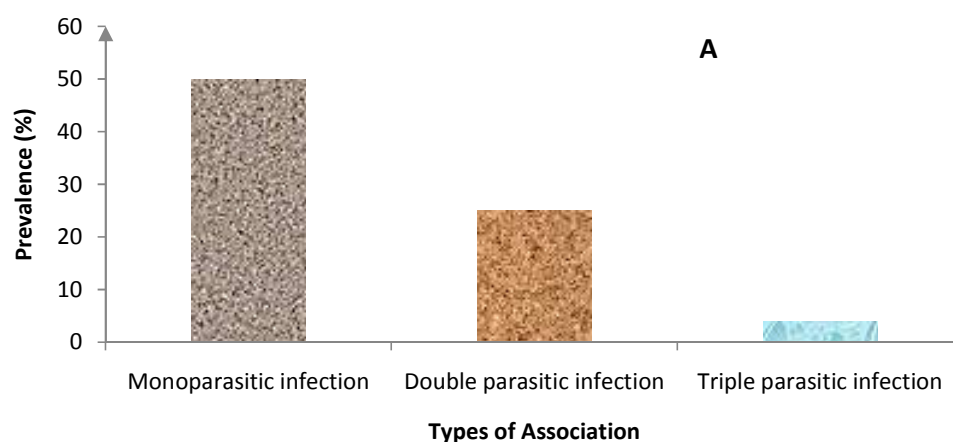
	Sex	
	FEMALE	MALE
Gastrointestinal parasite		
<i>Eimeria</i> spp.	89 (52.05)*	57(44.19)
<i>Ascaris</i> spp.	10 (5.85)*	2 (1.55)

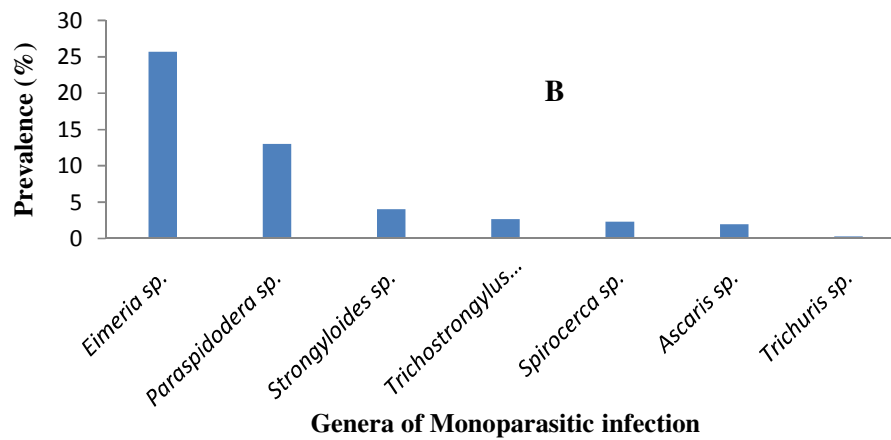
<i>Trichostrongylus</i> spp.	17 (9.94)	14 (10.85)
<i>Trichuris</i> spp.	8 (4.70)	2 (1.55)
<i>Strongyloides</i> spp.	16 (9.36)	16 (12.40)
<i>Spirocerca</i> spp.	5 (2.92)	4 (3.1)
<i>Paraspidodera</i> sp.	56 (32.75)	37 (28.68)

*- Differences significant at 5% (P<0.05).

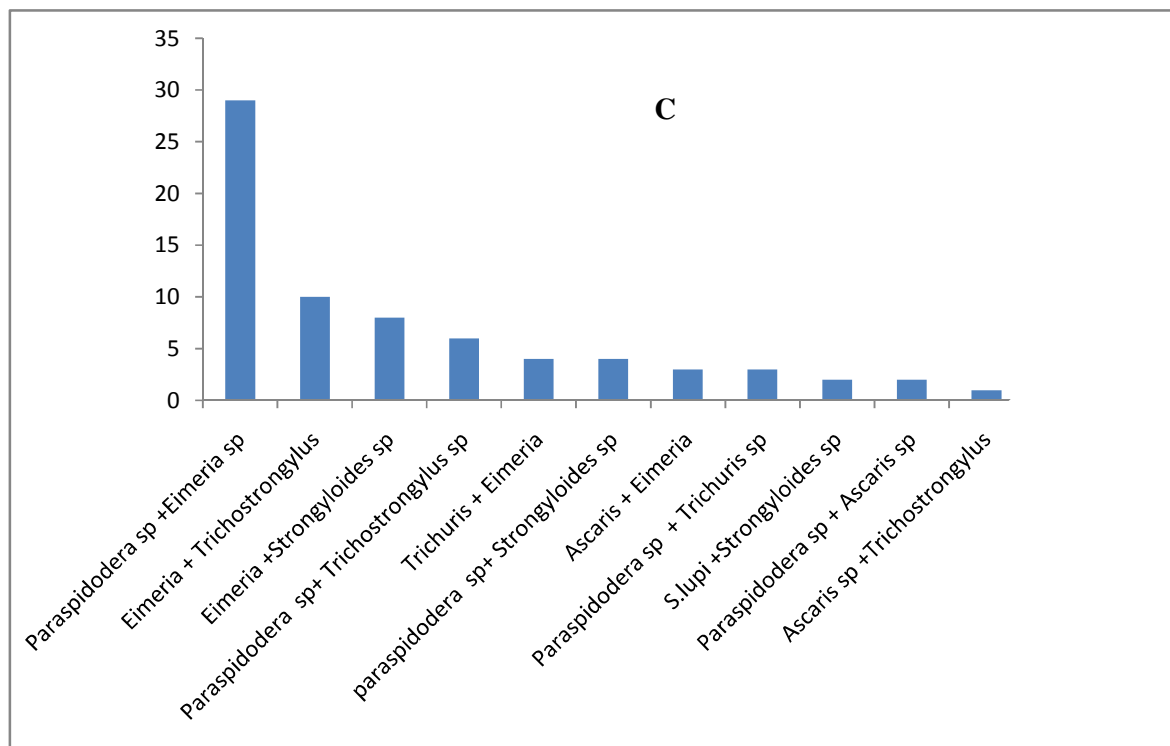
3.1.4. Prevalence of gastrointestinal parasitic associations

Of the 300 cavies examined for gastrointestinal parasites, 150 were infected with only one parasite, with a prevalence of 50%, seventy-five had double parasitic infections (25%) while twelve had triple parasitic infection (4%). Figure 1 A to D. Twenty-five cavies were found with different combinations of double associations of parasites. Of this number, 29 had a combination of *Paraspidodera* sp. + *Eimeria* spp., giving the highest prevalence of 9.7% followed by *Eimeria* spp. + *Trichostrongylus* spp. with a prevalence of 3.3%. Twelve animals had 3 different combinations of triple association; a combination of *Eimeria* spp. + *Strongyloides* spp.+ *Paraspidodera* sp. were recorded in 2% of the animals, followed by the combination of *Eimeria* spp. + *Trichostrongylus* spp. + *Paraspidodera* sp., recorded in 1.3% of the animals.





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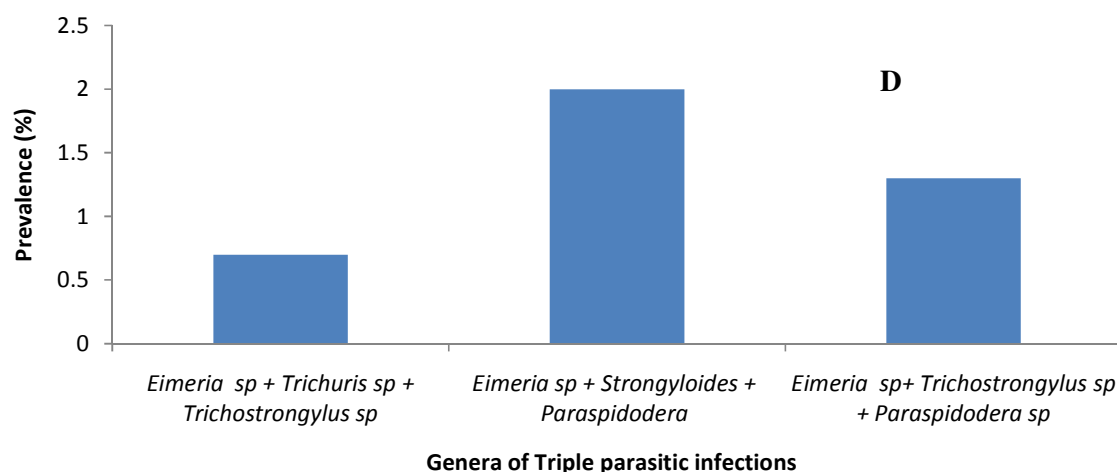


Figure 1. A-D: Types of gastro-intestinal parasitic associations

3.2. MEAN INTENSITY OF INFECTION (EPG and OPG)

3.2.1. Intensity of infection (EPG and OPG) in relation to host age

The intensity of infection of gastrointestinal parasites varied with age of the animal (Table). It was noted that intensity of *Eimeria* spp. increased with age of the animal, with the highest intensity of infection (505.71 ± 438.207 OPG) in cavies older than 16 weeks. The genus *Paraspidodera* showed a similar observation with the older animals showing higher intensity of infection. Generally, it was observed that animals older than 9 weeks showed higher intensities for most of the gastrointestinal parasites.

Statistically, there was a significant difference in intensity ($P < 0.05$) for *Eimeria* spp. and *Paraspidodera* sp. based on age.

169 **Table 4: Mean intensity of gastro-intestinal parasites (EPG and OPG) with respect to age group**



PARASITE	Age Group (weeks)					TOTAL
	1 - 4	5 - 8	9 - 12	13 - 16	> 16	
<i>Trichuris</i>	–	66.67 ± 28.868	100 ± 0.0	100 ± 70.711	–	90.0 ± 45.947
<i>Paraspidodera</i>	155.0 ± 89.598	121.67± 75.067	275.0 ± 271.299	321.88±284.59	458.33 ±242.69*	255.38 ±236.880
<i>Ascaris</i>	75.0 ± 35.355	75.0 ± 35.355	250.0 ± 70.711	100.0 ± 0.0	270.0 ± 130.38	187.50 ±126.356
<i>Strongyloides</i>	–	144.44 ± 123.60	127.78 ± 112.11	175.0 ± 146.39	150 ± 118.32	148.44 ±120.807
<i>Trichostrongylus</i>	75.0± 35.355	114.29 ± 85.217	183.33 ± 211.35	195.45 ± 165.0	300.0 ± 353.55	175.81± 186.579
<i>Spirocerca</i>	–	–	50.0 ± 0	75.0 ± 35.36	131.50 ± 55.868	85.33 ± 42.249
<i>Eimeria</i>	219.05 ± 280.84	385.0 ± 271.981	481.67 ± 602.94	459.76 ± 600.13	505.7± 438.21*	430.61 ± 494.852

170 Mean ± Standard deviation. *- Differences significant at 5% (P<0.05).

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3.2.2. Mean intensity of infection (EPG and OPG) of gastrointestinal parasites in relation to sex

Only *Paraspidodera* sp. had significantly higher intensity in females than in males. Generally, most of the gastrointestinal parasites had higher intensities in females than in , but the differences were not significant (Table 5).

Table 5: Mean intensity of infection (EPG) of gastrointestinal parasites in relation to sex

Parasite	Gender	
	Female	Male
<i>Trichuris sp.</i>	81.25 ± 25.877	125.0±106.066
<i>Paraspidodera</i>	301.79±265.598*	185.14±164.935
<i>Ascaris</i>	210.0 ± 126.91	75.0 ± 35.355
<i>Strongyloides</i>	156.25±123.659	140.63±121.407
<i>Trichostrongylus</i>	197.06±209.516	150.0 ±158.114
<i>Spirocerca</i>	50.0 ±0.0	120.66±48.249
<i>Eimeria</i>	452.78 ± 601.288	395.61±505.883

*Differences significant at 5% (P<0.05).

3.2.3. Mean intensity of infection (EPG and OPG) of gastrointestinal parasites in relation to locality.

Intensity of infection of gastrointestinal parasites varied with locality. The highest intensity was recorded for the genus *Eimeria* (692.31 ± 761.278OPG) in Penka – Michel, followed by Nkong-ni (434.62 ± 334.60 OPG), then Dschang (427.27 ± 356.87 OPG). The genus *Paraspidodera* equally registered high intensities in all the six localities, with its highest intensity in Nkong-ni (363.16 ± 231.45 EPG) and the lowest in Fongo-Tongo (165.0 ± 88.35 epg). The genus *Trichostrongylus* registered the highest intensity in Santchou (363.16± 231.446 epg) as compared to the other localities. Statistically, it was noticed that the intensity of *Eimeria* and *Trichostrongylus* was significantly different based on locality (P<0.05).

PARASITE	Localities					
	DSCHANG	FOKOUÉ	FONGO TONGO	NKONG-NI	PENKA MICHEL	SANTCHOU
<i>Spirocerca</i> spp.	–	–	85.33±42.249	–	–	–
<i>Trichuris</i> spp.	–	–	–	75.0 ±28.868	100.0 ± 54.772	–
<i>Ascaris</i> spp.	–	218.75±125.178	–	–	–	125.0 ±119.024
<i>Strongyloides</i> spp.	162.50±130.247	125.0 ±119.024	195.83 ±138.92	75.0 ±26.726	–	–
<i>Trichostrongylus</i> spp.	77.27 ±46.710	307.14±297.809	–	–	150 ± 70.71	316.67 ±275.38*
<i>Paraspidodera</i> sp.	250.0 ±294.649	220±168.819	165.0 ±88.349	363.16±231.446	220.0±191.775	246.87 ± 277.17
<i>Eimeria</i> sp.	427.27± 356.872	155.0 ±95.834	168.18±128.982	434.62±334.595	692.31±761.278*	330.56 ±285.50

Table 6: Mean intensity of infection (EPG) of gastrointestinal parasites in relation to locality



Mean intensity ± standard deviation. *- Differences significant at 5% (P<0.05).

4.0 DISCUSSION

Based on faecal examination, six genera of nematodes (*Paraspidodera* sp, *Trichuris* spp, *Trichostrongylus* spp., *Strongyloides* spp., *Ascaris* spp., and *Spirocerca* spp.), were identified, giving a prevalence of 63.3% for helminths, and one genus of Protozoa (*Eimeria*) was equally identified, giving an overall prevalence of 79.0% for gastrointestinal parasites. This prevalence is higher than 37.06% recorded in Peru by Dittmar, 2002. This difference might have been due to the difference in sample size, locality and cavy management techniques (extensive in Menoua and intensive in Peru). Nouboussi (2011) in a similar study on gastrointestinal parasites of cavies in Menoua, reported the following four genera *Paraspidodera* sp., *Ascaris* spp., *Strongyloides* spp. and *Trichostrongylus* spp. with an overall prevalence of 26.38% (unpublished data). This difference may be due to the fact that in the present study, more localities were included (six sub divisions with fifteen villages unlike four villages in the former study). Moreover, differences in the method of coprologic analysis (where in this study, the double centrifugation flotation technique was used instead of simple flotation technique used by the former worker). Baker (2006) revealed that centrifugal flotation is more sensitive than simple flotation because it magnifies gravitational forces, thereby accelerating the downward movement of more dense debris and the upward movement of less dense parasite forms. However, the prevalence recorded in this study is lower than the 100% recorded in Addis Ababa by Tanideh *et al.* (2010) and Tadesse *et al.* (2011). This higher prevalence is probably due to the fact that both workers examined only confined laboratory cavies. Confining these animals in cages in the laboratory increases the likelihood of transmission of parasites faeco-orally since food becomes easily contaminated with faeces from infected animals.

The genera *Trichuris*, *Ascaris*, *Trichostrongylus* and *Strongyloides*, are equally common parasites of domestic animals, and have been recorded in other parasitological studies involving *Cavia* sp. such as that carried out by Dittmar (2002), Gressler *et al.* (2010), and other ecological associates of cavies such as goats, sheep and cane rat both in Cameroon and Africa at large (Ndamukong, 1985; Mpoame *et al.*, 1994; Odoi, *et al.*, 2007; Omonona 2011; Meaza *et al.*, 2012; Ntonifor *et al.*, 2013). The climatic conditions of Menoua is described as humid tropical climate (Seino *et al.*; 2013) and is highly suitable for survival and transmission of infective stages of these parasites. Another contributing factor towards the relatively high prevalence of these nematodes may be due to the fact that these parasites have many domestic animals as their hosts,

poor farm management techniques including interspecific animal rearing in house kitchens and repeated use of the same feeding grounds which are heavily contaminated with old and new excreta, and generally poor hygienic conditions of the farm.

Interestingly, during this study, was the observation of *Spirocerca* eggs in the faeces of domestic cavies. However, this parasite registered low prevalence 9 (17.31) and intensity (85.33 ± 42.249) Nevertheless, Anderson (2000) and Cameron (2003) reported that rodents are paratenic hosts of this parasite. Although it is uncommon in domestic cavies, it is possible that the infected cavies became contaminated faeco-orally by hunting dogs which were reared in the same household with the cavies in Fongo Tongo. Therefore, the presence of this 'rare' parasite in cavies can be attributed to cross infection from dogs.

There was a significant difference ($p < 0.05$) in prevalence of infection with all gastrointestinal parasites in relation to locality. Differences in agro-ecology and cavy management techniques singly or in combination might be responsible for this variation in prevalence. Menoua Division has two agro- ecological zones with slightly different temperature and humidity ranges due to a variation in altitude (Seino *et al.*, 2013). Temperature is inversely proportional to altitude, and it was noted that higher prevalence of infection with gastrointestinal parasites was in the low land districts. Again, cavies are frequently exchanged between farmers within the same locality (sub division) than between Sub-divisions. These exchanges are done to minimize inbreeding (cross between parents and offspring within the same farm). Thus, parasites from one farm are easily transmitted to cavies in another farm within localities than between localities. Furthermore, the traditional cavy management system is slightly different in the different localities. It was noted that in some localities, the farmers confined their animals in small corners of kitchens, either due to limited space (Dschang) or because of the farmers desire to pile up decaying pasture, mixed with faeces of cavies which will serve as manure for vegetable cultivation (Penka-Michel and Nkong-Ni). This provided the microclimate for easy transmission and survival of GI in these localities. In other localities, the free range management system is practiced, where animals scavenge on the floor sometimes in association with other domestic animals like chicken, dogs, ducks and in two cases cane rats. This practice encourages disease transmission from infected to uninfected animals.

It was observed that older animals had significantly higher EPG or OPG than younger ones for the genera *Eimeria* and *Paraspidodera*. These results corroborate the findings of

Tadesse *et al.*, 2010 and Ntonifor *et al.* (2013) who also registered higher intensity of infection with nematode parasites in older ruminants than the young. However, this observation is not in agreement with the fact that immunity against infections increases with age due to acquired immunity (Tadesse *et al.*, 2010). It is believed that adult animals have a higher potential of scavenging within their kitchen confinement than younger animals. They therefore are more likely to ingest food contaminated with eggs of nematodes. Literature reveals that reproduction in cavies begin as early as two months, and these animals have a post- partum oestrus of three and a half hours (Wagner, 1976). Therefore, females older than 8 weeks are almost always pregnant and lactating. This places a stress on the immune system of these pregnant cavies making older females more susceptible to infection. Again, Soulsby (1982) indicated that these parasites lay large number of eggs daily, especially in immuno-compromised hosts.

Intensity of infection for *Paraspidodera* sp. was significantly higher in females, probably due to the fact that female cavies older than 8 weeks are immune-compromised as explained above.

As concerns gastro-intestinal parasitic association, it was observed that the most prevalent gastrointestinal parasitic association was between *Eimeria* spp. and *Paraspidodera* sp. This is because both parasites have similar lifecycle, being transmitted by infective eggs or sporocyst and both have short duration of 2-5days for eggs or oocysts to become infective. Again, Gorsich *et al.* (2014) reported that coccidia are intracellular microparasites, which replicate within the epithelial cells of the intestinal mucosa, often resulting in physical damage of the mucosal immune system, while *Paraspidodera* is extracellular. Intracellular and extracellular parasites invoke opposite and cross-regulating immune responses. As a result, hosts may have difficulty simultaneously mounting a strong response to co-infection by intracellular and extracellular parasites, leading to increased disease severity in co-infected animals.

Seven GIP recorded in this study are of veterinary importance because their intensity on affected animals was high, leading to general morbidity, irritation, reduced feeding and weight loss, lameness, reduced reproductive potential and sometimes death.

Conclusion

The overall high prevalence recorded in this study clearly indicates the need for strategic parasite control in cavies with particular attention focused on adult to old aged cavies which

showed significantly higher prevalence and parasitic load for most of the gastrointestinal parasites. Although most of these infections are subclinical, they are relevant as they are able to affect the animal physiology, leading to changes in immunological, histological, nutritional, biochemical, and haematological parameters, besides affecting susceptibility to other infectious agents thus affecting their productivity and quality. Again, parasitic infections in laboratory animals, even in the absence of clinical signs, may act as an important variable during experimental assays as well as a potential of infecting personnel and researchers. The result underscored the importance of proper sanitation and improved husbandry of these animals as this will reduce the infection and infestation rate, thus improving Cavy culture in Cameroon.

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